

**GOVERNMENT POLYTECHNIC, SAMBALPUR (RENGALI)**


**DEPARTMENT OF CIVIL ENGINEERING**


NAME OF THE FACULTY: Miss PINKY SAHU (PTGF) Civil Engineering

**LESSON PLAN OF CONCRETE TECHNOLOGY (TH-4) FOR 6TH SEM SUMMER-2024 w.e.f. 16.01.2024**

WEEK NO.	TOPIC TO BE COVERED	PERIODS ASSIGNED PER TOPIC	PERIODS AVAILABLE PER WEEK
W-1	Concrete as a construction material: 1.1 Grades of concrete. 1.2 Advantages and disadvantages of concrete.	2	2
W-2	2.1 Composition, hydration of cement, water cement ratio and compressive strength, fineness of cement, setting time, soundness, types of cement.	4	4
W-3	Classification and characteristics of aggregate, fineness modulus, grading of aggregate, I.S.383 3.2 Quality of water for mixing and curing.	6	3
W-4	3.3 Important functions, classification of admixtures, I.S 9103, accelerating admixtures, retarding admixtures, water reducing admixtures, air containing admixtures		3
W-5	4.1 Concept of fresh concrete, workability, slump test, compacting factor test, V-bee consistency test and flow test, requirement of workability, I.S.1199.	6	4+2 Extra class
W-6	5.1 Cube and cylinder compressive strengths, flexural strength of concrete, stress-strain and elasticity, phenomena of creep and shrinkage, permeability, durability of concrete, sulphate, chloride and acid attack on concrete, efflorescence.	7	4
W-7			3
W-8	6.1 a) Introduction b) Data or input required for mix design.	5	3
W-9	6.2 Nominal mix concrete & design mix concrete. 6.3 Basic consideration for concrete mix design, Methods of proportioning concrete mix – I.S Code method of mix design (I.S.10262)		2
W-10	7.1 Batching of materials, mixing of concrete materials, transportation, placing of concrete, compaction of concrete (vibrators), Curing of concrete, Formwork-requirements and types, stripping of forms. (Concepts only)	6	3
W-11	8.1 Quality control of Concrete as per I.S.456. Factors affecting the variations in the quality of concrete 8.2 Mixing, Transporting, Placing & curing requirements of Concrete as per I.S.456.	6	3

W-12	8.3 Inspection and Testing as per Clause 17 of IS:456. 8.4 Durability requirements of Concrete as per I.S:456.		3
W-13	9.1 Introduction to ready mix concrete, high performance concrete, silica fume concrete, shot-crete concrete or gunitting (Concepts only).	6	4+2 Extra class
W-14	10.1 Types of deterioration, prevention of concrete deterioration, corrosion of reinforcement, effects and prevention	6	4+ 1SCA+ 1Extra class
W-15	11.1 Symptom, cause and prevention and remedy of defects during construction, cracking of concrete due to different reasons. Repair of cracks for different purposes, selection of techniques, polymer based repairs, common types of repairs.	6	4+2 Extra class

  
 Signature of Concerned Faculty  
 Department of Civil Engineering

  
 C/S Signature of Senior Lect./ HOD  
 Department of Civil Engineering